Journal of Computational Physics

VOLUME 79, 1988

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich, Publishers
San Diego New York Boston
London Sydney Tokyo Toronto

Copyright © 1988 by Academic Press, Inc.
All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1988 articles are as shown on the article title pages; if no fee code appears on the title page, the copy fee is the same as for current articles.

0021-9991/88 $3.00

Printed by Catherine Press, Ltd., Brugge, Belgium

CONTENTS OF VOLUME 79

Number 1, November 1988

)AVID SELDNER AND THOMAS WESTERMANN. Algorithms for Interpolation and Localization in Irregular 2D Meshes 1

TANLEY OSHER AND JAMES A. SETHIAN. Fronts Propagating with Curvature-Dependent Speed: Algorithms Based on Hamilton–Jacobi Formulations 12

AARON L. FOGELSON AND CHARLES S. PESKIN. A Fast Numerical Method for Solving the Three-Dimensional Stokes' Equations in the Presence of Suspended Particles 50

M. G. G. FOREMAN AND A. F. BENNETT. A Numerical Stability Analysis for the Two-Dimensional Incompressible Euler Equations 70

P. WESSELING. Cell-Centered Multigrid for Interface Problems 85

B. D. REDDY AND H. F. VOYÉ. Finite Element Analysis of the Stability of Fluid Motions 92

V. Y. SOH AND JOHN W. GOODRICH. Unsteady Solution of Incompressible Navier–Stokes Equations 113

AHMED F. GHONIEM, GHASSEM HEIDARINEJAD, AND ANANTHA KRISHNAN. Numerical Simulation of a Thermally Stratified Shear Layer Using the Vortex Element Method 135

D. M. SLOAN. On Modulational Instabilities in Discretisations of the Korteweg—de Vries Equation 167

. I. ZAKI, L. R. T. GARDNER, AND T. J. M. BOYD. A Finite Element Code for the Simulation of One-Dimensional Vlasov Plasmas. I. Theory . . 184

. I. ZAKI, T. J. M. BOYD, AND L. R. T. GARDNER. A Finite Element Code for the Simulation of One-Dimensional Vlasov Plasmas. II. Applications 200

MOTOHIKO TANAKA. Macroscale Implicit Electromagnetic Particle Simulation of Magnetized Plasmas 209

NOTES

EWALD MÜLLER. Flux-Vector Splitting for the Euler Equations for Real Gases 227

A. I. SHESTAKOV. Comparison of Finite Differences and Finite Elements on a Parabolic Problem 231

IST OF FORTHCOMING ARTICLES 244

M. J. BAINES AND A. J. WATHEN. Moving Finite Element Methods for Evolutionary Problems. I. Theory 24
I. W. JOHNSON, A. J. WATHEN, AND M. J. BAINES. Moving Finite Element Methods for Evolutionary Problems. II. Applications 27
J. LAVERGNAT, TH. LEHNER, AND A. Y. LE ROUX. Nonlinear Beam Plasma Interaction Using Finite Difference Methods 29
H. KAPLAN AND N. DINAR. A Three-Dimensional Stochastic Model for Concentration Fluctuation Statistics in Isotropic Homogeneous Turbulence 31
WOLFGANG WAGNER. Unbiased Multi-step Estimators for the Monte Carlo Evaluation of Certain Functional Integrals 33
YI-LING F. CHIANG. Truncation and Accumulated Errors in Wave Propagation 35
P. K. YEUNG AND S. B. POPE. An Algorithm for Tracking Fluid Particles in Numerical Simulations of Homogeneous Turbulence 37
G. MILLER, V. FABER, AND A. B. WHITE, JR. Finding Plasma Equilibria with Magnetic Islands 41
JOHN E. LAVERY. Nonoscillatory Solution of the Steady-State Inviscid Burgers' Equation by Mathematical Programming 43
A. BARRY, J. BIELAK, AND R. C. MACCAMY. On Absorbing Boundary Conditions for Wave Propagation 44

NOTES

C. CHRISTODOULIDES. A Rational Approximation for the Exponential Appearing in the Theory of Thermally Stimulated Processes . . . 46
CHAO-YU QIN. An Explicit Energy-Conserving Numerical Method for Equations of the Form $d^2x/dt^2 = f(x)$ 47
DAVID G. DRITSCHEL. Contour Dynamics/Surgery on the Sphere . . 47
M. J. HODGSON AND C. M. M. NEX. On "A New Splitting to Solve a Large Hermitian Eigenproblem" 48

CORRIGENDUM 48

ANNOUNCEMENT 48

LIST OF FORTHCOMING ARTICLES 48

AUTHOR INDEX FOR VOLUME 79 48